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MARKETING CREAMERY BUTTER.

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CONTENTS.

	Page.
Introduction	1
Uniform quality of butter an important market requirement	2
Packages for bulk butter	3
Preparing packages for bulk butter	5
Consumers' packages	8
Transportation facilities for butter	13
Wholesale trade organizations	16
Market grades of creamery butter	17
Market inspection of creamery butter	20
Butter quotations	21
Market distribution of creamery butter	26
Cold-storage methods and facilities	28
Brands and trade-marks for butter	31
Advertising and salesmanship	35
Summary	36

INTRODUCTION.

The purpose of this bulletin is to present in logical sequence general facts and information regarding the packing, shipping, and marketing of creamery butter, which may be of interest to producers, distributors, and consumers of dairy products, as well as students and dairy officials. It is not intended that this bulletin should contain only new facts, but rather to make available in one publication a great deal of information regarding the marketing of creamery butter, which is of general interest. It should not be implied from the statement of any existing method or condition that the department thereby approves of such method or condition. A discussion of the more complex economic phases of butter marketing has been omitted purposely with the intention of treating them in future publications after further investigation and study.

A general survey and investigation was conducted in over 50 cities, in which the market requirements as well as methods and facilities for distribution were carefully studied. In each market visited numerous samples of butter were inspected and interviews were obtained with wholesale butter receivers, jobbers, brokers, man-

Note.—This bulletin should be of special interest to manufacturers and distributors of creamery butter in the United States and of general interest to dairy farmers who sell cream to creameries.

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agers of chain stores, retailers, restaurant and hotel proprietors, officials of produce exchanges and butter boards, the official butter inspectors of the exchanges, managers of cold-storage warehouses, and officials of transportation companies.

UNIFORM QUALITY OF BUTTER AN IMPORTANT MARKET REQUIREMENT.

A frequent complaint made by the dealers and distributors in the markets is a lack of uniformity of the butter produced by many creameries, and an increasing quantity at certain seasons of inferior butter which is known as "undergrades." An inspection of this butter indicated that the inferior quality was often due to the use of cream of poor quality and to some extent to faulty manufacturing methods.

The requirements of various markets differ widely in some particulars, and butter of certain characteristics which is acceptable on some markets may meet serious objection on others. An illustration of this variation is found in New York and Philadelphia where certain consuming classes require butter of light color and salt, a firm waxy body, and a quick, fresh, sweet, clean flavor, while in Baltimore, Washington, and the markets of the South, the consumers generally prefer a deep yellow color, medium to heavy salt, and a reasonably fresh, clean flavor. Some markets require a high-flavored, firm-bodied, well-made piece of butter. Creamery men would do well to pay more attention to the importance of producing butter of the quality demanded by critical markets if they wish to obtain the highest market prices for their products. They should also know the requirements of the various markets and the channels of trade through which each grade of butter reaches that trade which demands it.

In the larger markets there are buyers for every grade of butter. The large retail chain store and chain restaurant systems in many cities often are confronted with the problem of obtaining large supplies of butter of uniform quality for their trade. They usually have been unable to buy directly from local country creameries or to obtain their supplies from the smaller jobbers and have been obliged, therefore, to buy from the larger wholesale receivers or centralizing creameries which may have large quantities of butter of a uniform quality. The retail chain store system is becoming an important factor in retail butter distribution. In some of the larger cities 40 per cent or more of the butter is retailed by chain stores. In many of the larger cities very satisfactory sales might be made to these stores by country creameries, if they produced butter of uniform quality and concentrated their product either at points within the areas of production or on the market where the chain store buyers could obtain such grades and quantities as they require. The employ-

ment of an inspector-instructor by various groups of country creameries in order to standardize the quality of their product would seem to be a move in the right direction and could be followed by standardization in methods of marketing and by the inspection of the butter and by branding it according to official grades. Greater uniformity in quality of butter is of primary importance to successful marketing, and creamery butter makers should give this phase of the subject most careful consideration.

COMMON FAULTS IN BUTTER.

The more common faults observed in the markets in the quality of butter are: Soft, leaky, open body; too much or not enough salt; too high or too light color; metallic flavors; high acid, unclean, and old cream flavors; streaks and mottles; mold on butter, also moldy and dirty packages. Butter possessing such faults, although not always classed as "undergrades," is often discriminated against by the critical buyer. During those seasons when the market receipts are heavy and the market is weak such butter can be moved only at low prices, and often sells at 6 to 8 cents below the better grades.

PACKAGES FOR BULK BUTTER.

The two styles of packages used for bulk butter are the "tub" and the "cube." In the Middle West the creameries use the 63-pound ash tub very generally, while in the New England States a preference is shown for butter put up in spruce tubs, of 10, 20, 30, 50, and 60 pounds capacity. When the local production in New England is insufficient to supply the demand, spruce tubs often are shipped to creameries in Michigan, Wisconsin, Iowa, Minnesota, Nebraska, and other western dairy States, as a premium of approximately half a cent per pound is usually paid by the New England buyers for butter packed in these tubs.

The use of the "cube" is confined almost wholly to the creameries located in the Pacific Coast States. (See fig. 1.) This container for bulk butter is made of fir and spruce. The shooks used for making the cubes are usually surfaced only on one side, which is placed toward the butter. The outside of the cube is therefore very rough and does not present an attractive appearance. Foreign markets to which considerable butter has been shipped from the Pacific coast have commented upon the rough surface of the cube and upon the lack of uniformity in size and net weight of the packages. The cube is a crude package in contrast to the containers used in New Zealand, which are neat, attractive, rectangular boxes, holding exactly 56 pounds, and are branded with the name of the creamery, export brand, and net weight on each end.

There has been considerable variation in the size of the cubes used, some holding 63 pounds, some 68, and others approximately 80 pounds. As a step toward standardizing the size of the cube, the San Francisco Wholesale Dairy Produce Exchange recently ruled that butter offered on the exchange as "extras" should be packed in cubes with sides, tops, and bottoms one-half inch in thickness

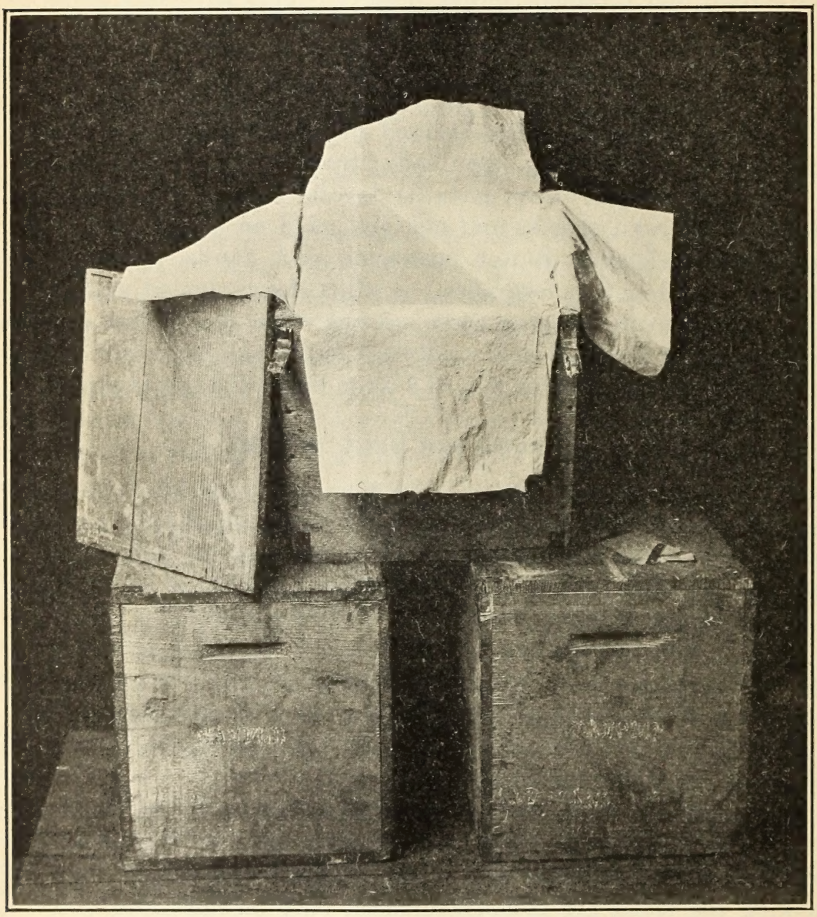

FIG. 1.—The cube is used on the Pacific coast for solid packed bulk butter. Its inside dimensions are 12¼ inches by 12¼ inches by 13½ inches. Its net weight is approximately 68 pounds.

and ends seven-eighths of an inch in thickness, lumber to be surfaced on both sides, corners to be rounded, inside measurement 12¼ by 12¼ by 13½ inches, and net weight to be marked on each end. The net weight of such a cube would be approximately 68 pounds. Cubes of a uniform size, which are neat and attractive in appearance, would be much more satisfactory and highly desirable both for local and foreign markets.

PREPARING PACKAGES FOR BULK BUTTER.

Before packing butter into tubs or cubes they should be scrubbed thoroughly with a stiff bristle brush and strong hot alkali water until the wood is bright and clean. (See fig. 2.) Then it is well to soak them in a tank of strong brine, as it tends to hold in check the development of mold. The soaking of the tub or cube also increases its moisture content and tends to reduce the shrinkage of the butter. The package should be paraffined before the parchment paper liner is applied, especially if the butter is to be placed in cold storage for a number of months. The liners should be soaked in a strong

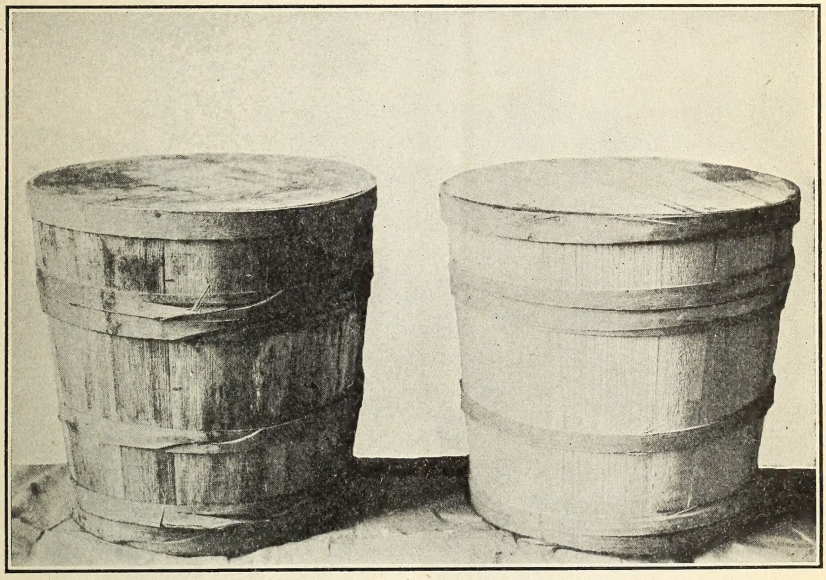

FIG. 2.—White ash butter tubs which hold approximately 63 pounds of butter. The tub on the left presents an unattractive appearance, due to its moldy condition. Butter in clean tubs is sold more readily and at higher prices in the market.

solution of brine and carefully placed in the tub or cube so that the butter is protected from direct contact with wood and presents a neat and attractive appearance when the package is opened for inspection.

PACKING BULK BUTTER.

In packing butter in tubs or cubes the parchment liners should be retained in the proper place and the butter packed solidly so that it is free from holes. (See fig. 3.) In some of the larger eastern markets a great deal of butter is retailed direct from the tub, and to some extent this is done with cubes on the Pacific coast markets. When tub butter is retailed in this way, the tub and liner are removed, and it is cut with a wire into three horizontal layers. De-

pressions and holes in the butter caused by wrinkled liners and careless packing seriously injure the appearance of the butter, which should be neat and attractive to please the consumer.

BRANDING TUBS AND CUBES.

Butter shipped interstate in package form is required by Federal law to be branded with its net weight. Some States and cities require

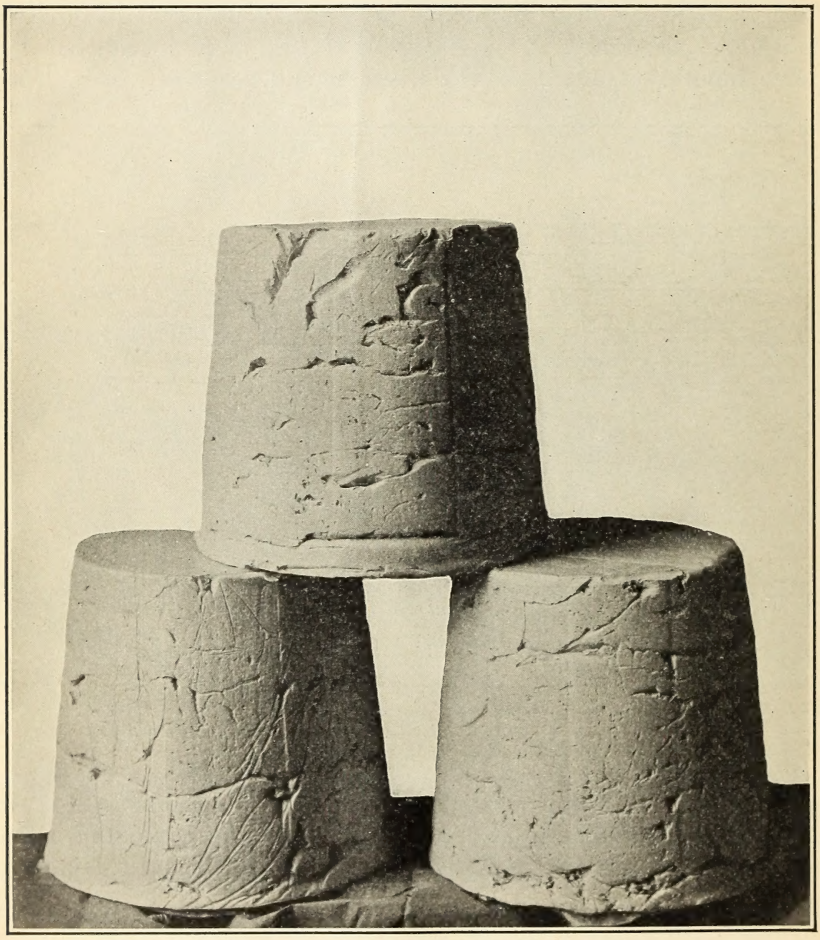

FIG. 3.—Tub butter which was poorly packed. The holes or pockets expose more surface, thus permitting greater shrinkage and development of mold.

the net weight to be branded upon consumers' packages. The branding of the tub and cube with the gross weight, net weight, and tare greatly facilitates the handling of bulk butter on the market. In the market inspection of a shipment of butter consisting of different churnings it would be convenient to have the number of the churning placed on each tub. The name or stencil number of the creamery and

the receiver's name and address should be stamped on the top of the tub or cube. The suggestions obtained from the practice in some foreign countries of having the name, address, and license number of the factory printed on each end of the cube or container, and of burning into the wood the net weight, are worthy of consideration.

MARKET METHODS OF WEIGHING TUB BUTTER.

Various methods of determining the net weight of butter in tubs are employed. (See fig. 4.) Some receivers accept the weights marked on the tubs by the creamery; others weigh each tub separately and mark upon the outside of the tub the gross weight in

FIG. 4.—Each shipment of butter is weighed and inspected by the wholesale receiver upon its receipt in his cooler or butter cellar.

full pounds. A number of the tubs are then stripped and the average net weight of actual butter in full pounds is obtained. The difference is taken as representing the tare of the tub. The rules of the Chicago Butter and Egg Board provide that a sufficient number of tubs in each lot (not less than 10 per cent) shall be weighed.

On the New York market (fig. 4), in determining the tare for the tub, the dealers usually make "test weights" as follows:

Weigh 3 tubs out of 12 or under.
Weigh 5 tubs out of 12 to 40.
Weigh 10 tubs out of 40 to 100.
Weigh 15 tubs out of 100 to 150.
Weigh 20 to 25 tubs out of a carload.

It is customary among the trade in weighing butter to require "up-weights," that is, the beam of the scale must balance against the upper rest, and when it does not the next lower pound is taken, fractional weights usually not being counted.

Since the net weight amendment to the pure food law became effective, distributors state that it is often unnecessary to weigh the butter, as the creamery's weights are accepted. It is very important, therefore, that creameries should weigh their butter correctly in order to obtain full weights. An allowance of one-half to three-fourths pound usually is made by creameries for shrinkage. Since the

FIG. 5.—In some markets a great deal of butter is retailed from tubs.

value of butter is higher than it was years ago when the present market methods of weighing were first adopted, it is even more important now that accurate methods of weighing be employed.

CONSUMERS' PACKAGES.

The trend at present in the market distribution of creamery butter is toward individual consumers' packages. The standard package most commonly used on eastern markets is the 1-pound print which measures $2\frac{1}{2}$ by $2\frac{1}{2}$ by $4\frac{5}{8}$ inches. In New York City, Boston, Buffalo, Cleveland, Charleston, and New Orleans the practice of retailing butter from tubs is still quite prevalent. (See fig. 5.) A large portion of the butter retailed is printed, wrapped, and placed in cartons

from tub butter. (See fig. 6.) Since the tub-shaped package is not the most desirable in some respects for cutting prints, a great deal of the butter distributed by the larger creameries is cut into prints at the creamery. Some creameries use the cube in preference to the tub for storage purposes, as it is better adapted to the cutting of prints.

The standard cube ($12\frac{1}{4}$ by $12\frac{1}{4}$ by $13\frac{1}{2}$ inches) used on the Pacific coast weighs about 68 pounds net and cuts out 64 full pounds of prints, thus leaving about 4 pounds of scrap to be repacked. A number of creameries in Ohio and Indiana are using cubes for their

FIG. 6.—Wholesale distributors of butter in the larger markets use machines which cut and wrap the prints. The cartons are usually put on by hand.

shipments to Cincinnati, Louisville, Columbus, and other markets, as the dealers find them to be more economical in cutting prints from the standpoint of investment in printing equipment, labor, and shrinkage.

SHRINKAGE IN PRINTING TUB BUTTER.

The shrinkage in cutting prints from tub butter due to the loss of free moisture and a slight overweight allowed on each print is a larger item than ordinarily is considered. It has been found to vary from one-half to $1\frac{1}{2}$ pounds per tub. The various factors which

influence the loss of moisture are the temperature or firmness of the butter when printed; the firm, loose, or leaky body of the butter; the condition in which the moisture is incorporated; and the equipment and method employed in cutting the prints. In order to avoid large shrinkages or losses in printing, some receivers sort out those tubs which have a firm body and in which the moisture is well incorporated. With a loss of 1½ pounds per tub in printing loose, leaky-bodied butter, it is evident that receivers cannot afford to pay as much for such butter as for butter in which the loss in printing is less.

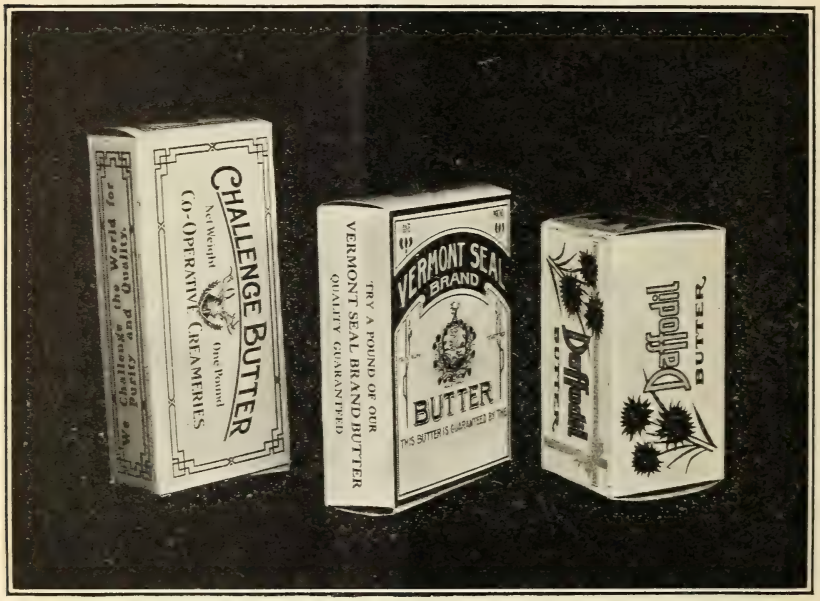

FIG. 7.—Three styles of 1-pound butter cartons are used. The right one is used by creameries in the Middle West, the center one is used in Vermont, and the one on the left on the Pacific coast.

THE USE OF CARTONS AND RETAILERS' BRANDS.

The use of cartons for print butter is increasing upon every market. Their advantages are that they make a more sanitary package which is more convenient for the retailer to handle, the quality of the butter is preserved longer, and, if branded with the name of the manufacturer or distributor, they furnish an advertising feature. (See fig. 7.) The larger chain stores handle print butter under their exclusive brands which are put up for them either at the creamery, by the jobber from whom they buy, or in their own butter printing department. Many retailers and wholesale distributors find it convenient and economical to furnish parchment wrappers and cartons bearing their private brands to creameries which for a small extra charge put their butter up for them.

LESS-THAN-POUND PACKAGES.

Two methods are used in marketing the less-than-pound packages. Some creameries use cartons which carry less than a pound. Others use a special frame on their printer and either halve or quarter the regular pound print ($2\frac{1}{2}$ by $2\frac{1}{2}$ by $4\frac{5}{8}$ inches). Figure 8 shows this method of marketing one-fourth, one-half, and 1-pound prints, by using the 1-pound carton. The individual pieces of butter are wrapped separately with parchment paper, consolidated into a pound package, and the whole wrapped with wax paper. When this method of putting up butter is employed an extra wholesale price of one-half to 1 cent a pound usually is obtained.

In some cities a large portion of the butter is sold in these styles of packages. This custom is prevalent in the South and is increasing

FIG. 8.—The standard carton used in the Middle West is $2\frac{1}{2}$ by $2\frac{1}{2}$ by $4\frac{5}{8}$ inches. It may be used for full-pound prints, four quarter-pounds, or two half-pounds.

in the North, particularly among consumers who demand small amounts, or prefer their butter in this style on account of its greater convenience in serving.

ORNAMENTAL PRINTS.

The custom is still quite prevalent in some of the eastern markets to imprint on each roll, crock, or print of butter an ornamental design or emblem. Illustrations of some of these designs are shown in figure 9. This is accomplished by an attachment to the cutter, which produces the desired impression as the butter passes beneath it. At the smaller creameries hand molds are used. The general use

of these ornamental designs is decreasing and undoubtedly will become obsolete as individual consumers' prints in standard cartons come into more general use.

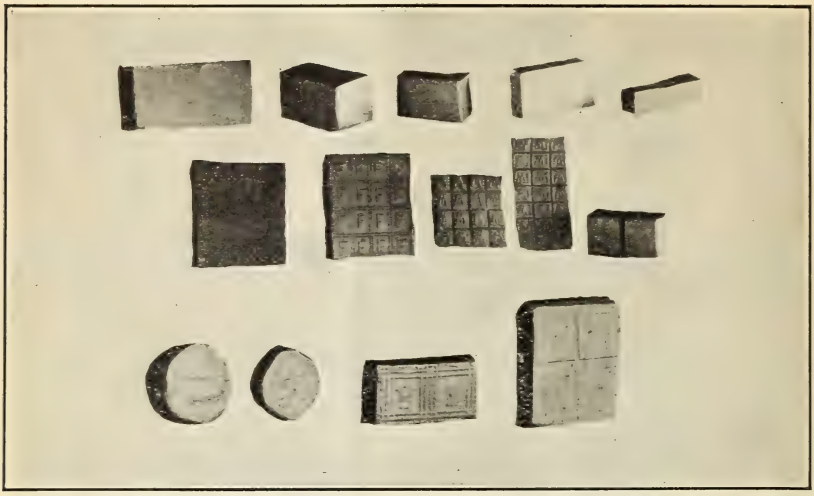

FIG. 9.—Ornamental prints are prevalent in New England. They are expensive to make and very inconvenient to pack and ship.

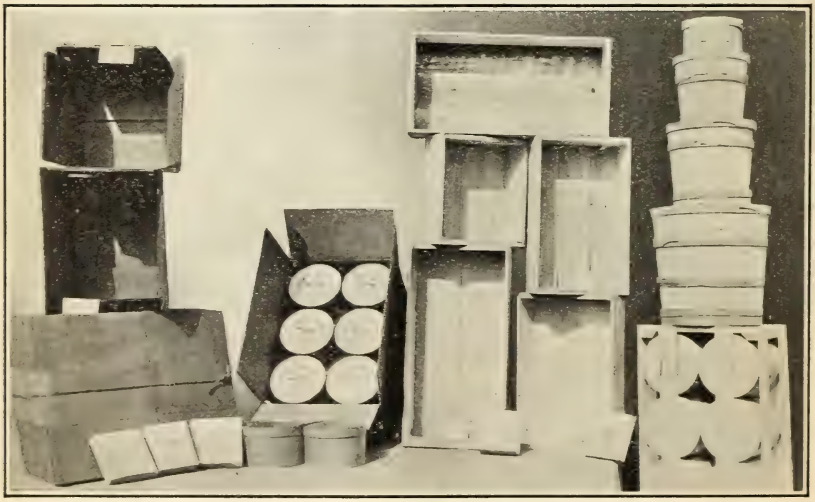

FIG. 10.—The unstandardized packages of New England require the use of various styles by a creamery. A standard package would be more convenient and satisfactory.

OTHER STYLES OF CONSUMERS' PACKAGES.

Throughout the New England States various styles of consumers' packages are in use. (See fig. 10.) The more common are known as the flat pound, flat half-pound, half-pound individual, 1-pound hotel bar, half-pound bar, western 1-pound prints, 2-pound brick,

5-pound rectangular box, 5-pound round box (wooden or fiber), and 10-pound tub. (See fig. 11.) This lack of uniformity means additional labor and expense for creameries when preparing butter for market. An effort is being made by the Vermont creameries to standardize the consumers' packages used in that State.

The customary consumers' packages on the Pacific coast are the 1 and 2-pound flat prints. The United States Navy in its contract for butter requires that a part of its supply be put up by the creameries in 5-pound sealed tins. (Fig. 12.) Butter for export to the Tropics usually is packed in similar tins, with the weights based on the metric system, and ranging from approximately one-half to 25-pound packages.

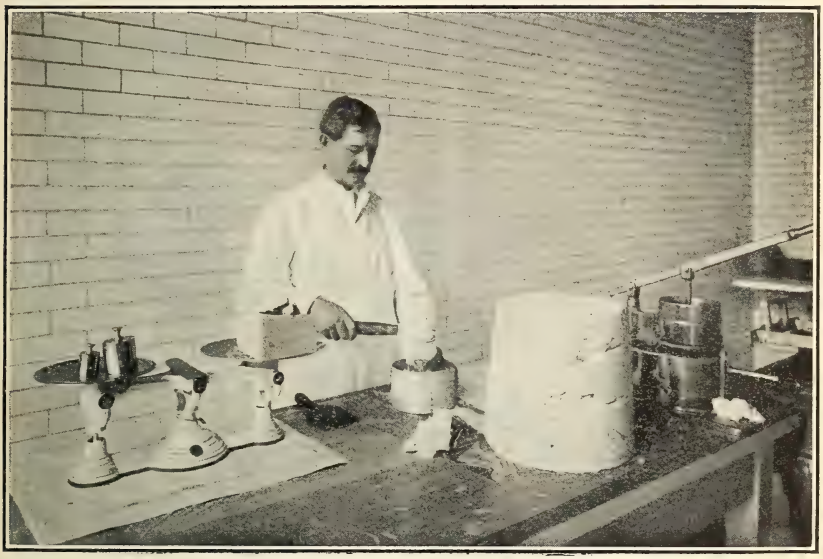

FIG. 11.—Tub butter is often repacked into smaller containers. The 5-pound wooden box is used as a consumer's package to some extent. The process is expensive as compared with cartoned prints.

SHIPPING CONTAINERS FOR BUTTER.

Fiber board, corrugated board, and wooden boxes are used as shipping containers for print butter. For city distribution, the fiber board boxes are used quite generally. When rehandling in transit is necessary or greater protection during the summer season is required, the wooden boxes often are preferred.

TRANSPORTATION FACILITIES FOR BUTTER.

In some sections the great bulk of the butter is shipped to the market by refrigerator freight. Throughout the dairy sections of the Middle West a regular scheduled refrigerator dairy freight service is

operated by the railroads or fast freight refrigerator companies, to move the shipments of butter from the creameries to eastern markets. The butter is collected from the creameries along the line in iced cars by "pick-up" service, and at junction or division points entire carloads are made up. The larger creameries which produce a carload or more of butter a week usually ship in carload lots directly from their plants. In distributing butter out of terminal markets such as Chicago, the various railroads extending into the South and East operate regular scheduled refrigerated package cars to certain cities where bulk cars are broken for distribution. In the more sparsely developed dairy sections and particularly with the smaller creameries,

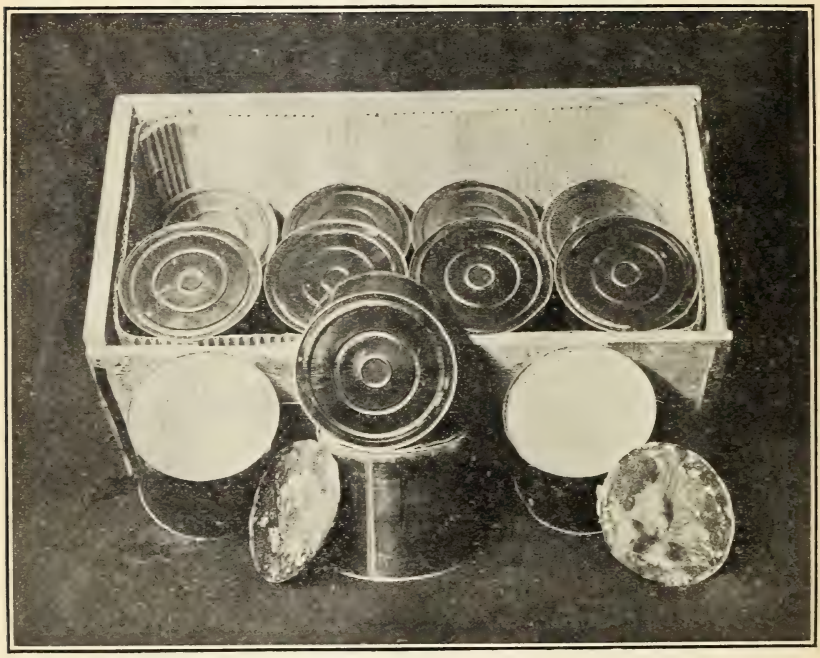

FIG. 12.—The butter exported to tropical countries is usually sealed in tins. The outside container is lined with corrugated fiber board and bound with strips of tin.

which market in local and neighboring cities, express service is commonly used.

Often express service may be used to advantage in reaching a junction point on a railroad through which a regular scheduled refrigerator car operates and from which refrigerator service by freight may be obtained to the market which the shipper desires to reach.

Arrangements prior to shipping should be made with the refrigerator car company to advance the local express charges, which they will later collect with the freight charges at destination.

The shipping tag on each package should carry the necessary routing instructions so that those handling the shipment may be fully informed of the service desired.

The advantages of this arrangement are twofold: First, movement of the product under refrigeration over a greater part of the route is obtained; second, the transportation costs are often less for the combined express and freight services than the regular through express charges.

REFRIGERATION SERVICE FOR BUTTER ON THE GREAT LAKES.

Inland waterway service has not been generally used for butter transportation. During the past two years, with three boats on the Great Lakes equipped with refrigerator compartments, a considerable quantity of butter was shipped by boat from Duluth, Minn., to Buffalo, N. Y., where much of it was reshipped by rail to eastern markets. This service has been generally satisfactory to those who have used it, and a saving in freight costs of approximately one-quarter cent per pound has been obtained.

OCEAN AND COASTWISE TRANSPORTATION.

Facilities for ocean and coastwise transportation of butter under refrigeration have been established to some extent. A large portion of the butter in coastwise trade is carried without refrigeration. This is true on both the Pacific and Atlantic coasts where the time between points is 48 hours or less. Some of the steamers have small refrigerator rooms which are used for butter as well as for milk, cheese, and other perishable products. With the development of trade through the Panama Canal, steamers sailing from the ports of the Pacific coast probably will be equipped with refrigeration so as to handle butter, as there is an increasing surplus on the Pacific coast for which markets may be obtained in the eastern and southeastern parts of the United States or in export trade.

COOPERATIVE CAR-LOT SHIPPING.

In various sections of the United States country creameries have cooperated in obtaining a special scheduled "pick-up" refrigerator-car service, and in concentrating local shipments into carload lots. By this means freight charges have been less and the butter has reached the market in better condition. When a number of creameries are located on the same railroad or in close proximity to each other, cooperative car-lot marketing may be a great advantage.

WHOLESALE TRADE ORGANIZATIONS.

The wholesale receivers of butter, eggs, and cheese in the larger markets have formed trade organizations. Through such organizations good fellowship is promoted and a meeting place or exchange room is maintained. At the meetings, which are usually held daily and are known as the "call" or "'change," sales are conducted. These sales are in the form of an auction and each member has the privilege of posting his offerings and bids or listing them with the official in charge. In order to facilitate trading between the members

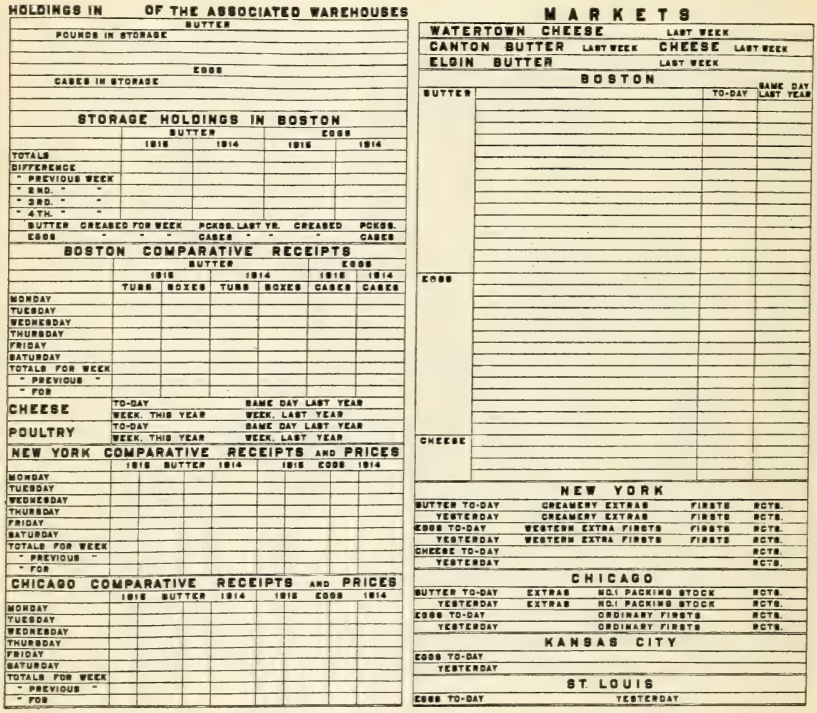

FIG. 13.—The wholesale trade organizations in the larger markets maintain bulletin boards on which market information is posted for the information of the trade.

rules and regulations have been adopted which provide (1) for the establishment of classes and grades of butter, (2) for an inspection service to apply these grades, and (3) for the adjustment of disputes in trading between members. Through the officers of the organization information is obtained for the members regarding the movement, prices, demand, and supply of butter in other markets and receipts at the local market. (See fig. 13.) They also obtain the benefits of cooperative action in matters which are of mutual interest,

such as State and city legislation, transportation and terminal facilities, and improvement of produce markets and marketing facilities.

MARKET GRADES OF CREAMERY BUTTER.

Market grades of creamery butter are necessary in order to facilitate trading and to establish market quotations for the various qualities. The purpose of grades is to establish a measure or standard for the qualities. A score card which recognizes the relative importance of the following characteristics is employed for the purpose of grading butter: Flavor (45), body (25), color (15), salt (10), and package (5). This gives a total of 100 points and the score the butter receives usually determines its grade.

The market grades of butter established by various wholesale produce organizations conform quite closely to a uniform standard. The interpretation or application of the grades by the butter inspectors may vary on the different markets and in educational and commercial scorings. These differences are due to a different requirement of quality which the inspector may use or a market may demand. Therefore butter scored 93 points by one inspector may be scored only 90 or 91 points by another, and an inspection certificate for an "extra" issued in one market may not be accepted as an "extra" in another. The requirements of each grade of creamery butter as established for the New York, Chicago, and San Francisco markets established for the New York, Chicago, and San Francisco markets by the wholesale trade organizations at each market are given herewith.

GRADES OF BUTTER ESTABLISHED BY THE NEW YORK MERCANTILE EXCHANGE FOR THE NEW YORK MARKET.

Extras.—Shall be a standard grade of average fancy quality in the season when offered under the various classifications. Ninety per cent shall conform to the following standard; the balance shall not grade below firsts:

Flavor.—Must be sweet, fresh, and clean for the season when offered.

Body.—Must be firm and uniform.

Color.—Not higher than natural grass, nor lighter than light straw, but should not be streaked or mottled.

Salt.—Medium salted.

Package.—Sound, good, uniform, and clean.

Firsts.—Shall be a grade next below extras and must be good butter for the season when made and offered, under the various classifications. Ninety per cent shall conform to the following standard; the balance shall not grade below seconds:

Flavor.—Must be reasonably sweet, reasonably clean, and fresh.

Body.—Must be firm and fairly uniform.

Color.—Reasonably uniform, neither very high nor very light.

Salt.—May be reasonably high, light, or medium.

Package.—Sound, good, uniform, and clean.

Seconds.—Shall be a grade next below firsts.

Flavor.—Must be reasonably good.

Body.—Must be solid boring.

Color.—Fairly uniform, but may be mottled.

Salt.—May be high, medium, or light.

Package.—Good and uniform.

Thirds.—Shall be a grade below seconds and may consist of promiscuous lots.

Flavor.—May be off-flavored and strong on tops and sides.

Body.—Not required to draw a full trier.

Color.—May be irregular or mottled.

Salt.—High, light, or irregular.

Package.—Any kind of package mentioned at time of sale.

Extra creamery may score either 91, 92, or 93 points at the discretion of the butter committee, who shall determine the required score from time to time in such manner that it shall represent an average fancy quality in the season when offered. But butter scoring more than required for extras shall be deliverable on a contract for extras, and may be branded as such at the request of seller or buyer. Any change in the standard score required for extras shall, after authorization by the butter committee, be announced by the caller at the opening of the next regular call and posted upon the bulletin board of the exchange and be effective 24 hours later.

The minimum score of Firsts shall at all times be 4 points below the score required for Extras.

The minimum score of Seconds shall be 5 points below the minimum score required for Firsts.

The minimum score of Thirds shall be 7 points below the minimum score required for Seconds.

GRADES OF BUTTER ESTABLISHED BY THE NEW YORK BUTTER AND EGG EXCHANGE (INC.) FOR THE NEW YORK MARKET.

This Exchange was organized in the spring of 1916 and adopted the same grades for Extras, Firsts, Seconds, and Thirds as the New York Mercantile Exchange. In addition a grade known as Specials was adopted, with the following requirements:

Specials shall be the highest standard grade of fancy quality in the season when offered of creamery butter. Ninety-five per cent shall conform to the following standard and the balance shall not grade below an Extra.

Flavor.—Must be the sweetest, freshest, and cleanest for the season when offered and must have a pronounced aroma and quick flavor.

Body.—Must be firm and uniform.

Color.—Not higher than natural grass nor lighter than light straw and can not be wavy, streaked, or mottled.

Salt.—Medium salted.

Package.—Must be clean, uniform, and in good condition and the butter must be solidly packed.

GRADES OF CREAMERY BUTTER ESTABLISHED BY THE CHICAGO BUTTER AND EGG BOARD FOR THE CHICAGO MARKET.

Extras.—Shall consist of a grade of butter scoring 93 points or higher.

Flavor.—Must be fine, sweet, fresh, and clean, and good, sweet, and clean if held.

Body.—Must be firm and solid, with good grain or texture, free from salviness.

Color.—Must be uniform, neither too light nor too high.

Salt.—Well dissolved, thoroughly worked in, not too high nor too light.

Package.—Good and sound as required in classification.

Extra firsts.—Shall be a grade of butter scoring 91 points or higher.

Flavor.—Must be fresh, clean, and sweet, and fairly clean if held; all other requirements same as extras.

Firsts.—Shall be a grade of butter scoring 87 points or higher.

Flavor.—May be faulty but must be fairly good.

Body.—Fairly good grain and texture.

Color.—Fairly uniform.

Salt.—Not unreasonably high or light.

Package.—Good and sound as required in classification.

Seconds.—Shall be a grade of butter scoring 80 points or higher.

Flavor.—May be unclean.

Body.—Must be fairly smooth boring.

Color.—May be irregular or mottled.

Salt.—May be irregular, high, light, or uneven.

Package.—Same as required in firsts.

Thirds.—Shall be a grade of butter scoring 75 points or higher.

Flavor.—May be off, old, or strong tops and sides.

Body.—May not be smooth boring.

Color.—Mixed or streaked.

Salt.—Irregular.

Package.—Miscellaneous.

Packages to be used.—Creamery tubs, hardwood, about 60 pounds (for extras shall be standard white ash with wood hoops). All other style of package must be specified.

GRADES OF CREAMERY BUTTER ESTABLISHED BY THE SAN FRANCISCO WHOLESALE DAIRY PRODUCE EXCHANGE FOR THE SAN FRANCISCO MARKET.

(The grade is not determined by the score alone.)

Extras.—Extras shall consist of the highest grade of butter.

Score.—Score shall average 93 points or higher for creamery or dairy; 90 per cent shall be up to the following standard, the balance shall not grade below "firsts."

Flavor.—Flavor must be quick, fine, fresh, and clean, if of fresh make, and good, sweet, and clean if storage stock.

Body.—The body must be firm and solid with perfect grain or texture, free from salviness.

Color.—Color must be uniform, neither too light nor too high; good straw-color standard.

Salt.—Salt must be thoroughly dissolved; not too high or too light salted.

Package.—Packages must be good, uniform, sound, and clean, and free from labels, brands, or stencil marks.

All fresh California butter, either squares or solid packed, grading "extras," to grade as such and be a good delivery when sold under the spot call, and in the absence of any agreement to the contrary, shall be packed, when in squares, in new, white wood 60-pound cases, parchment lined; and when solid packed, shall be packed in cubes, whose inside dimensions shall be 12¼ by 12¼ by 13½ inches, parchment lined, and the cubes shall weigh not less than 63 pounds nor more than 68 pounds net weight.

Prime firsts.—Prime firsts shall be a grade just below extras scoring 90 points or higher for creamery or dairy; 85 per cent shall be up to the following standard, the balance shall not grade below "firsts."

Flavor.—Flavor must be good, sweet, clean, and fresh for all current make, and good, sweet, and clean for held. All other requirements shall be the same as for "extras."

Firsts.—Firsts shall be a grade just below prime firsts, scoring 87 points or higher for creamery or dairy; 85 per cent shall be up to the following standard, the balance shall not grade below "seconds."

Flavor.—Flavor must be good, sweet, clean, and fresh for all current make, and good, sweet, and clean for held. All other requirements shall be the same as for "extras."

Seconds.—Seconds shall consist of a grade just below firsts. Score must be 80 points or higher for either creamery or dairy.

Flavor.—Flavor must be fairly good and sweet.

Body.—Body must be solid boring. If ladles, must be 90 per cent solid boring.

Color.—Color must be fairly good, although it may be irregular.

Salt.—Salt may be irregular, high, or light salted.

Package.—Packages must be good and sound, but may be second hand.

Thirds.—Thirds shall consist of a grade just below seconds. Score must average 70 points or higher.

Flavor.—Flavor must be reasonably good, may be strong on tops and sides.

Body.—Body must be fair boring if creamery or dairy and at least 50 per cent bore and full trier if ladles.

Color.—Color defective, mixed, or streaky.

Salt.—Salt irregular.

Package.—Package fairly uniform.

MARKET INSPECTION OF CREAMERY BUTTER.

In applying the grades established by an exchange, an inspector is employed or some person is appointed to make the inspections. In making an inspection a portion of the tubs in the lot is examined. The rules of the New York Mercantile Exchange provide that samples shall be drawn from each lot of "one mark and invoice," meaning one shipment from a single creamery, as follows:

Inspect 5 tubs from lots of less than 25 tubs.
Inspect 8 tubs from lots of 25 to 50 tubs.
Inspect 15 tubs from lots of 50 to 100 tubs.
Inspect 20 tubs from lots of 100 or over.

The rules of the Chicago Butter and Egg Board provide for the sampling and inspection of 5 tubs from lots of less than 50 tubs, and 10 tubs from lots of 50 to 100 tubs. Whenever the butter is quite irregular in quality the inspector may increase the number of samples until he is satisfied with his score for the lot. As the grade of a lot of butter usually is determined by the inspection of less than 20 per cent of the tubs, it is possible that the tubs inspected may not truly represent the average grade of the entire lot. The particular tubs in-

spected may be those of a churning of a lower or higher grade than the other tubs. It would be possible to avoid this if creameries would give each churning a consecutive number, and number the tubs of each churning accordingly. (See par. 6, p. 33 of Iowa State brand requirements.) In this way one tub from each churning could be inspected. This practice would also be a convenience to receivers and buyers in selecting tubs of the same quality or of a single churning.

DUTIES OF OFFICIAL MARKET INSPECTORS.

Most of the butter sold on the "call" is bought subject to official inspection, and in such sales the certificate of inspection is delivered to the buyer with the butter. When requested to do so the inspector also may certify to the grade of butter received by members of the exchange from creameries or sold privately by them. In some markets butter purchased for export, for the Government, or for private, municipal, or State institutions must bear the official stamp of the inspector. In trading between members of the exchanges, a certificate is issued but the packages are not stamped unless it is requested.

In some markets the inspector is regularly employed by the exchange, while in others one of the members of the exchange may be appointed to serve as inspector, since there are but few sales on "call" and inspections are rather infrequent.

Most of the butter is accepted from creameries by the wholesale receivers without an official inspection. Even in the market distribution of the butter it is largely a matter of bargaining between the salesman and the buyer. The receiver or buyer is the judge of the quality, and his inspection is spoken of as being "over the trier." If the price and quality are satisfactory, official inspection is unnecessary. Official market inspection of shipments from creameries are more frequent on a weak market or when the trend of prices is lower than on a firm market when prices are advancing. Such a practice has been criticized, and it has been proposed that the State creamery associations should maintain inspectors on the larger and more important markets. It has also been suggested that the Federal Government might maintain an inspection service on the principal markets and at points of concentration. Such a service would require the promulgation of Government grades for butter.

BUTTER QUOTATIONS.

Butter quotations are usually intended to serve as an index of the wholesale market value of certain grades of butter. Formerly the wholesale trade organizations exerted a considerable influence upon butter market quotations through quotation committees. In most markets at present the quotations are determined by market-reporting

agencies. The methods employed in arriving at the quotations vary somewhat in the different markets. It is the usual custom for a market reporter who is acquainted with the wholesale receivers and jobbers on the market to interview these dealers and obtain current information from them regarding the condition of the market, buying and selling prices of the various grades of butter, and the general movement of receipts. He also attends the meeting of the exchanges where he interviews members of the wholesale trade organization and notes the offers and bids on the "call." With this general information he is able to make a report of the market prices of butter which when published becomes the market quotation.

INFLUENCE OF EXCHANGE TRADING ON QUOTATIONS.

In a few markets the quotations for butter are established in accordance with the method just described, and the exchange trading has a considerable influence on the quotations. The sales on the "call" represent a very small percentage of the total receipts. Therefore it is apparent that the market reporter should be able to detect irregularities in the offers and bids in order to establish a quotation which reflects the actual market value. When market values are continually underquoted, the paying of premiums over quotations usually results. Exchange trading, therefore, which reflects the true market value of butter, must be free from manipulations.

That the New York Mercantile Exchange, the Chicago Butter and Egg Board, the Elgin Board of Trade, and the San Francisco Wholesale Dairy Produce Exchange have a widespread influence on the price and movement of creamery butter is generally recognized. The New York Mercantile Exchange meets at 10 each morning, eastern time; the Chicago Butter and Egg Board at 9.30, central time; and the Elgin Board about 12 m. on each Saturday.

Various methods of effecting sales on "call" are employed. Usually the offerings are numbered, and the bidder stipulates the number of the lot for which he is bidding. A sale is effected whenever a bid and offer of the same grade coincide. During the "call" the offers, bids, and sales are usually posted on the blackboard or "call" board.

THE BASIS FOR MARKET QUOTATIONS.

The true basis for a market quotation is the price at which the majority of the sales of a definite grade are made. By majority of the sales is implied the sales made under the free influence of the law of supply and demand. The greatest difficulty in establishing accurate market quotations at the present time is to obtain the price

at which actual sales of butter of a definite quality are made. Present quotations are largely estimates and approximations of market values.

The following reports of the butter markets at Chicago and New York were taken from the sources given and indicate the information which is considered of interest and value to producers and distributors of butter. It may be well to note that butter prices were at the climax for the season at the time these reports were made, having reached 38 cents at New York and 36½ cents at Chicago. Butter was mostly out of storage and current receipts in ready demand. Lighter buying by the retailers, attributed to curtailed consumption due to the current prices, had resulted in an unsettled feeling and slightly lower prices ruled during the following two days. The range between the lower and better grades was the narrowest for the season. The statements which are here presented in italics deserve especial notice.

NEW YORK, WEDNESDAY, MARCH 22, 1916.

(From the Producers' Price-Current.)

Butter.

	This week.	Last week.	Last year.
Receipts, Monday, pkgs..	5,041	5,268	4,365
Receipts, Tuesday.....	11,241	12,658	11,366
Receipts, Wednesday....	9,894	8,819	8,948
Total.....	26,176	26,745	24,679

The present supply of fresh creamery is barely equal to current wants, and *the market maintains a firm position. There is a loss of trade in some directions, due to the advanced retail prices,* but receipts from the usual sources of supply are not increasing materially as yet. *Another carload of California butter in to-day,* but not available at the present writing. *Further shipments* in transit, and this *may relieve the situation somewhat. Transactions on 'Change this morning included seven lots of 25 tubs each, creamery extras, at 38¢.* Open business was very generally at that price, but the feeling was strong enough to give sellers some advantage, and *it did not always require inspected goods to go at that rate. The higher*

CHICAGO, THURSDAY, MARCH 23, 1916.

(From Daily Trade Bulletin.)

The receipts at Chicago (not including through shipments) for the days mentioned were as follows:

Butter.

	This week.	Last week.	Last year.
	Tubs.	*Tubs.*	*Tubs.*
Monday.....	9,840	8,079	9,794
Tuesday.....	8,675	6,832	8,927
Wednesday.....	8,387	7,908	8,366
Thursday.....	4,805	4,843	5,649
Total.....	31,707	27,662	32,736

A steady feeling exists and prices practically unchanged. New York was reported 1¢ lower.

A fair business is being transacted, and as yet *the market keeps cleaned up quite closely,* although *receivers* find they are compelled to *carry over butter occasionally,* as the demand is limited to buyers supplying their immediate wants, and these are not for any great quantities. *Conditions are not just what they were a few days ago, when butter was taken up on arrivals and the price was no object. Now buyers hesitate and figure* on what will do them the best, *and*

scoring lots are still absorbed mostly by regular trade; anything free to be sold brings 38½ @ 39¢. Fresh firsts and seconds have quick sale, the former at 36½ @ 37½¢ and the latter at 34 @ 36, with comparatively few lots to be had below 35¢. *Unsalted creamery moving out very satisfactorily. Storage creamery* continues in active demand, and the small available stock is fast passing out of first hands. Extras are firm at 35½ and 36¢, several sales reported at the top figure, and other grades range from 33 and 35¢.

Creamery, extras (92 score, per lb	38 @
Creamery (higher scoring lots)	38½ @ 39
Creamery, firsts (88 to 91 score)	36½ @ 37½
Creamery, seconds (83 to 87 score)	34 @ 36
Creamery, thirds	32 @ 33
Creamery, unsalted, fancy	39 @ 40
Creamery, unsalted, prime to choice	37½ @ 38½
Creamery, unsalted, common to good	34 @ 37
Creamery, held, extras	35½ @ 36
Creamery, held, higher scoring	
Creamery, held, firsts	34 @ 35
Creamery, held, seconds	31½ @ 33½
Creamery, held, thirds	30 @ 31

are taking the undergrades, or something a little cheaper than the highest priced goods. *High prices have curtailed consumption somewhat*, and some jobbers or cutters, while not receiving direct any more butter than they usually obtained, have a little surplus occasionally, for which they must find outside sale, simply because their outlet has been reduced. *Dealers in most instances are anxious to keep sold out, and, while adhering to the market value, there is a more or less nervous feeling noticeable.*

A small car of butter was received from California. It is put up in boxes of about 66 lbs. The quality was pronounced very fine and quotably about 36¢.

A small consignment of butter is expected to be received *from New Mexico* to-day or to-morrow.

Storage butter in good demand. June Extras are salable at 34 @ 34½¢.; some fancy, special lots are held above. Firsts are quotable at 33 @ 33½. It is claimed by dealers there is nothing to be had under about 32¢.

Extras in fresh creameries met with a fair demand, and it is not easy to secure desirable makes. *They are quotable at 36½*, and occasional *small lots of special brands brought a slight premium.*

Extra firsts which grade 91 points and up *are salable at 36¢.*

Firsts in fresh creameries are quotable within the range of 34 @ 35½¢. *Anything sweet and suitable for table use is picked up readily.*

Seconds in creameries are very scarce. Can not hear of any transactions, and quoted nominally about 31 and 32¢.

Creamery extras, fresh, per lb	36½
Extra firsts	36
Firsts	34 @ 35½
Seconds	31 @ 32

PUBLICATION OF BUTTER QUOTATIONS.

New York.—The New York butter quotation is published in The Producers' Price-Current, a daily publication issued by a market-

reporting agency. This quotation is established by them and is used quite generally by the creameries of Minnesota, Iowa, and other States shipping to the New York market.

Chicago.—The Chicago butter quotation is published in the Daily Trade Bulletin, which is devoted to the produce markets. This quotation is used quite extensively by Iowa, Wisconsin, and other creameries selling their butter on this market.

Philadelphia.—At the close of each daily meeting of the Philadelphia Produce Exchange a vote is taken by the members upon the condition of the butter market and the quotation for that day. This price is marked upon the board and becomes the market quotation. This quotation is published in the daily and trade papers by authority of the exchange as the official quotation. It is used as the basis of sales to retailers and also for purchases of butter from nearby creameries.

Boston.—The Boston butter quotation which is used as a trading basis between New England creameries and the Boston butter dealers is published in the weekly market report issued by the Boston Chamber of Commerce. A committee of the Chamber of Commerce establishes a quotation on Wednesday of each week. A daily quotation is also published by the Boston Fruit and Produce Exchange in the form of a mimeographed sheet, which is distributed to its members and serves principally as a guide for local trading.

San Francisco.—The butter quotation at San Francisco is established by the San Francisco Wholesale Dairy Produce Exchange through the bids and offers on the "call," and is published by the Daily Commercial News as the official quotation for that territory. The markets at Los Angeles, Portland, Seattle, Spokane, and Salt Lake City are influenced to some extent by the San Francisco quotation.

THE ELGIN QUOTATION.

The Elgin quotation is established by the Elgin Board of Trade at Elgin, Ill. At one time this town was the center of the creamery industry of northern Illinois, which embraced a territory known as the Elgin District. The creameries throughout this territory inaugurated a practice of offering their butter for sale to buyers at meetings of the Elgin Board of Trade, which were attended by butter dealers from Elgin, Chicago, and other cities. For a number of years the quotation established for creamery butter by the Elgin board was the basis at which creameries generally sold their butter and also purchased their butter fat. Very little creamery butter is produced within the territory surrounding Elgin at the present time, as the sweet cream and milk supply is contracted for by condenseries and Chicago milk distributors. At present there are a few persons

who are interested in the operation of the Elgin board and every Saturday at noon they meet for the purpose of transacting a few sales, which establish a quotation for the following week. The Elgin board recognizes but one grade of butter, namely, an "extra," which is required to score 93 points. The rules of the board do not provide a penalty for the offering of butter on the board which is lower than an "extra," and the buyer may reject his purchases if he finds the butter to be of a lower grade.

Throughout Wisconsin, Illinois, Iowa, Indiana, and Ohio many creameries base the selling price of their butter upon the Elgin quotation and to some extent also the buying price of butter fat. Many distributors in Cleveland, Buffalo, Baltimore, and other cities, particularly those of the South, which formerly obtained their supplies from the Elgin district, prefer to have their purchases based on the Elgin quotation. This quotation is infrequently used as a trading basis by the large centralizing creameries.

MARKET DISTRIBUTION OF CREAMERY BUTTER.

There are various channels of trade through which butter may pass from producer to consumer. The general custom of country creameries in shipping butter to the larger markets is to consign it to the receiver or to contract with the receiver for the sale of the butter on the basis of the market quotation. Often the receivers send out field representatives who go among the creameries and solicit their output.

It is a common practice among creameries to draw a sight or demand draft against the consignee and to attach this to the bill of lading which is passed to their local bank for collection. By so doing, the creamery obtains an advance credit of $10 to $15 on each 63-pound tub of butter in the shipment.

The jobbers in buying from the wholesale receivers inspect the butter and buy such grades and quantities as they require for their trade. Nearly all wholesale receivers also do a jobbing business and supply retail stores. A considerable portion of a wholesale receiver's business consists of car-lot and less-than-car-lot sales to distribute in his own or in other large markets.

The tendency among the larger creameries, and to some extent also among the smaller, is to distribute directly to the retailer, by establishing branch distributing offices or by contracting with distributing agents to handle their account in a certain territory. In some cities delivery equipment is furnished the distributor by the creamery to develop the business and facilitate the distribution of the product. Some dealers have their salesmen take orders and the delivery is made later. (See fig. 14.) Others who handle private brands of print butter, also eggs and cheese, have their salesmen make

the deliveries at the time the order is taken, thus effecting very economical distribution of small orders. In some cities, old established firms use the telephone extensively in soliciting orders. Deliveries are made to the down-town stores and markets daily, and to the suburban stores two or three times a week.

DISTRIBUTORS' MARGINS ON BUTTER.

The costs of market distribution were investigated in each of the cities visited which included the larger and more important whole-

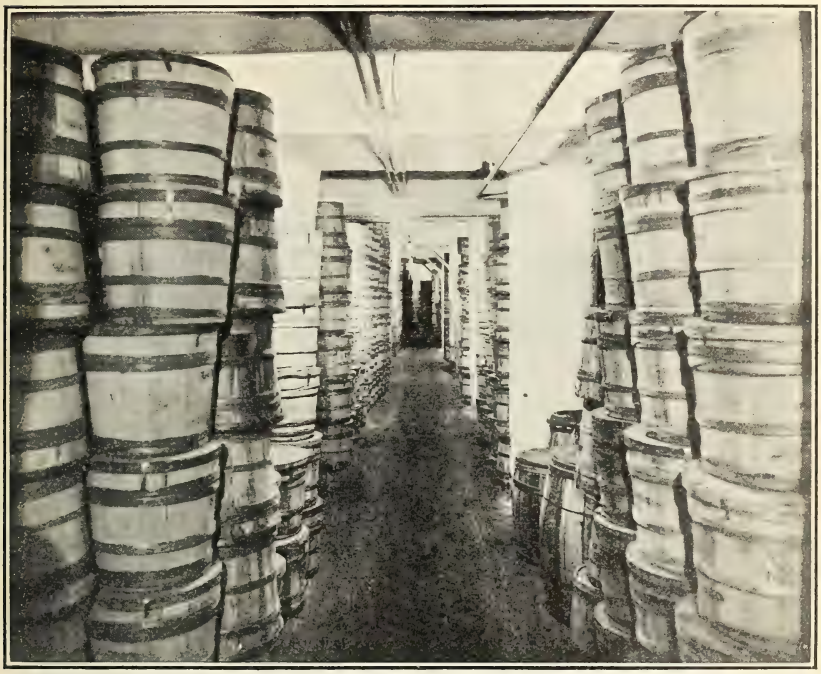

FIG. 14.—The storage of butter tends to stabilize butter prices. About one-tenth of the total annual production is placed in storage where its quality is preserved at a temperature of zero Fahrenheit or below.

sale and jobbing markets in the United States. It was found that the margins taken by butter distributors, in general depend upon the character of the business done; that is, whether wholesale or retail, and such factors as volume of business, extent of charged accounts, competition, and general conditions of the market. The wholesale receiver sells large lots usually at a margin of from one-fourth to three-fourths cent a pound with a fair average of one-half cent per pound. The jobber who distributes bulk packages or prints, employs salesmen, maintains delivery equipment, and extends credit to the retailer, usually receives from $1\frac{1}{2}$ to $2\frac{1}{2}$ cents per pound gross margin for rendering this service. The gross margin is not all net

profit, for a large amount of capital is required to conduct a wholesale or jobbing business and the expenses are considerable. (See Fig. 15.)

The margins taken by the retailer show wider variations than those for other distributors. Butter frequently is handled by some stores on a week-end day at cost, for the purpose of attracting customers as an advertising feature. The usual margin taken by cash stores and chain stores will vary from 3 to 5 cents, depending upon the ruling retail price of butter. The retailer with a small butter business, who has to maintain an expensive delivery service and carry numerous credit accounts, often takes a margin of 5 to 7 cents to cover costs and profit.

FIG. 15.—The distributing equipment of wholesalers and jobbers of butter may be quite extensive. Often salesmen use automobiles when taking orders and auto trucks or wagons are used in making delivery.

COLD-STORAGE METHODS AND FACILITIES.

A considerable amount of butter is placed in cold storage during the season of surplus production, which begins about April 1 and extends into August, when the receipts of fresh butter on the markets are larger than the requirements for the consuming trade. It is a well-recognized fact that storage of butter is an economic necessity, first, as a means of conserving its quality and, second, as a factor in equalizing the price throughout the various seasons of the year. The better grades of butter are in greatest demand for storage

purposes. Many distributors who have a regular established trade make a practice of storing butter in order to be assured of a supply during the winter season. Other dealers store large quantities of butter as a speculative investment.

The principal places of storage in the eastern United States are Chicago, New York, Boston, Philadelphia, and Omaha. Among other cities at which considerable quantities are stored are St. Paul, Duluth, Buffalo, Pittsburgh, St. Louis, Kansas City, New Orleans, and Norfolk. On the Pacific coast San Francisco, Portland, Seattle, Spokane, Salt Lake City, and Los Angeles are the principal points of storage. Owing to its geographical location, which permits easy reshipment to the East or South, Chicago is the greatest center for the storage of butter. Omaha is becoming a large storage center for butter made by the centralizing plants in that section. A temperature of zero Fahrenheit or below usually is maintained in butter-storage rooms.

REPORTS OF HOLDINGS IN STORAGE.

There are approximately 50 cold-storage warehouses that are members of the American Warehousemen's Association which report at the close of each month the amount of butter and eggs in their storages. This report is issued by the secretary of the association. These warehouses are believed to carry approximately 50 per cent of the total butter in storage.

On August 1, 1916, the Office of Markets and Rural Organization of the Department of Agriculture began to issue monthly reports of the holdings of creamery butter in storage. Information for these reports is obtained from the cold-storage warehouses on blanks furnished by the department. Statistics of the cold-storage holdings of butter in 1914 indicate that approximately 18 per cent of the butter placed in storage is received into storage in May, 33 per cent in June, 23 per cent in July, and 7 per cent in August, or during these four months 81 per cent of the butter stored is delivered into storage. Deliveries out of storage were more gradual, approximately 11 per cent being removed in August, 8 per cent in September, 9 per cent in October, 12 per cent in November, 15 per cent in December, 11 per cent in January, 9 per cent in February, 11 per cent in March, and 5 per cent in April. The deliveries out of storage during each of eight months (September to April, inclusive) exceed the receipts into storage, therefore the period of storage for various lots is variable. The average length of storage is approximately 6.2 months.

Legislation in regard to the cold storage of butter differs in the various States. Some States require that the packages be stamped

with the dates the butter is placed in storage and removed from storage, while others require only the date of removal. Many States have no such requirements.

THE RATES FOR STORAGE OF BUTTER.

The rates for storage of butter vary in different cities and with different storages. The following schedule is found to prevail with many cold-storage companies:

12½ cents per hundredweight per month for less than car lots.
10 cents per hundredweight per month for car lots.
25 cents per hundredweight per month for small lots stored for 30 days or less.

The customary rate with small storages is one-fourth of a cent per pound per month.

FINANCING OF STORAGE OPERATIONS.

Formerly it was customary for storage operators to negotiate loans on butter through banks, but now many cold-storage houses handle the loans themselves and hold the warehouse receipt as collateral security. The usual interest rate charged on loans is 6 per cent. The charges for insurance range from $4 to $15.50 per $1,000 valuation, depending upon the construction, location, and equipment of the building. These are based upon a yearly period and rebates are made when the butter is carried for a shorter time. The amount loaned on butter varies from 60 to 70 per cent of its value. It is often convenient for butter distributors to deal directly with a storage company in obtaining loans and insurance, and storage companies acting as agents in these lines facilitate their business and fill their rooms. They can also handle smaller accounts and make larger advances, as they have the butter in custody.

MARGINS ON STORAGE BUTTER.

The margins on storage butter depend upon a number of factors, such as the keeping quality of the butter, the marginal difference between the price paid and the market value of the butter when it is removed from storage, the costs of storage, and the expense of handling it. It is customary to estimate the carrying charges roughly at one-fourth cent per pound per month. The following statement illustrates the approximate costs for interest, storage, and insurance:

Interest on 100 pounds butter at 28 cents for six months at 6 per cent	$0.84
Storage on 100 pounds butter at 10 cents per hundredweight per month for six months	.60
Insurance at rate of 42 cents per $100 for six months	.1176
Cost per 100 pounds for 6 months	$1.5576
Cost per 100 pounds per month	.2596

BRANDS AND TRADE-MARKS FOR BUTTER.

Within recent years there has been a growing tendency to establish private brands and trade-marks for butter. The adoption of a private brand and the registration of it gives a distributor or creamery a basis for working up a special demand or trade, also for carrying on an advertising campaign. Designs and names which are intended as trade-marks may be registered in some States, and with the United States Patent Office at Washington, D. C.

STATE BRANDS FOR BUTTER.

Several States have adopted State brands for butter, the purposes of which have been varied. Oregon and Washington some years ago adopted a system of State brands which was intended to be used

FIG. 16.—Trade mark for "A 1" grade of Minnesota State Brand Butter.

only on butter produced within the State. More recently the States of Minnesota, Iowa, and Michigan have provided for State brands which are intended to convey a guaranty of purity and quality.

STANDARDS FOR STATE BRAND BUTTER.

Minnesota was the first State to pass a law providing for the use of a State brand by butter and cheese factories when certain conditions are complied with. (Minnesota general laws of 1913, ch. 366.) The Minnesota State brand is patterned to some extent after the requirements of the Government export brand of Denmark, known as the "Lur" brand. The designs adopted for the two Minnesota brands are alike except in the lettering (A1) or (B). (See fig. 16.) The requirements for the use of the "A1" brand are more strict than for the "B." Following are the requirements for the use of the A1 brand, as published in the Fifteenth Biennial Report, 1914, p. 23, of the Minnesota Dairy and Food Commissioner.

Score of butter or cheese to be 94 nine times out of twelve in 1 year. Score of butter or cheese can never be below 93. Factory to score 90 or better. Sanitary machinery, piping, and equipment. Score of 94 for the butter made 15 days prior to application for license. Farm dairy to score 60 points or better according to score card provided by dairy and food commission. Cows tested for tuberculosis 6 months previous to issuing license and every 2 years thereafter. Cream to be pasteurized. Cream must be received sweet and test less than 0.2 per cent acid. Use of neutralizers in cream not permitted. When a license is granted a list of the patrons must be furnished the dairy and food commissioner, with address of each, and statement that cows have been tested for tuberculosis. Factory must report number of pounds of butter manufactured each month. Brand is to be used only at factory.

The rules for grade B permit a lower score and the use of milk and cream from cows which have not been tested for tuberculosis.

The State of Iowa (Supplemental supplement, Code of Iowa, 1915, section 2515-f) in adopting a State brand or trade-mark (see fig. 17) for Iowa butter placed it in charge of an executive committee of five members, consisting of the president of the Iowa State Dairy Association, the president of the Iowa State Buttermakers' Association, the dean of the division of agriculture of the Iowa State College of Agriculture and Mechanic Arts, the professor of dairying of the same institution, and the dairy and food commissioner of the State of Iowa, who have control of the use of the trade-mark under such rules as may be considered necessary. The following rules and regulations governing the use of the Iowa butter trade-mark were issued in Bulletin No. 16 of the Iowa dairy and food commission, December, 1915:

FIG. 17.—Trade-mark for Iowa State Brand Butter.

1. Butter sold under the trade-mark shall be manufactured in a creamery which meets the requirements of the Iowa sanitary law. Such creameries shall obtain a score of 85 or above, 100 being perfect, scored in accordance with the Iowa State score card for creameries.

2. The butter shall obtain a score on the quality of not less than 93 points, 100 being perfect, on 75 per cent or more of the scoring. A creamery obtaining a score on butter below 92, or a creamery that has more than 25 per cent of its scoring below 93, shall forfeit its right to the use of such trade-mark until such time as the creamery is again in a position to meet the necessary requirements.

3. All butter marked with the Iowa State mark shall comply with the Iowa State standards and contain not less than 80 per cent of butter fat, and shall contain less than 16 per cent of moisture. No preservative, neutralizer, or

adulterant shall be added to butter or to the cream from which the butter is to be manufactured.

4. Butter sold under said mark shall be manufactured from cream which has been pasteurized, either in the form of milk or cream. Pasteurization shall consist in heating the milk or the cream to a temperature of not less than 140° F. and holding it above 140° F. for a period of not less than 20 minutes, or heating the milk or cream to a temperature of not less than 180° F. when flash is applied.

5. If the butter is solid packed in tubs, the tubs shall bear the Iowa State mark on two opposite sides, the marks shall be placed immediately below the upper hoop or hoops, said mark to be 3 inches in diameter. In addition to the markings as stated, the top surface of the butter shall bear an imprint of the said mark, this imprint to be 5 inches in diameter and the imprint into the butter shall be from one-sixteenth to one-eighth of an inch in depth. Butter in boxes either solid packed or in print shall bear similar markings on both ends of the boxes as those placed on the outside of tubs. A similar imprint shall be made into the butter if solid packed.

6. The date of manufacture of the butter shall be marked on the outside of the tub or box close to the State mark, in letters not less than one-half an inch in height, the same being placed in the following manner: $\frac{12\text{–}5.}{6}$

The figure 12 designates the number of the month, the figure 6 designates the day of the month, and the figure 5 designates the number of the churning on that day. Thus for the above markings the reading would be that the butter was manufactured on the twelfth month, sixth day, and was the product of the fifth churning.

7. Parchments for print butter may be marked with the State trade-mark. The size of such marking shall be 2 inches in diameter. At this time the board does not require the marking of the date on individual prints.

8. Application, in writing, shall be made to the State dairy and food commissioner, who, after having satisfied himself that the manufacturer is qualified to comply with all the requirements, will issue a permit to use the State mark and also furnish copies of the mark and necessary equipment to the applicant. No other stamp or markings shall be used unless the same shall meet with the approval of the State dairy and food commissioner.

The State of Michigan by an act of the legislature (Michigan public acts . . . 1915, public act No. 53) provided for a Michigan State brand butter commission, which has authority to adopt rules, regulations, and specifications for Michigan State brand butter. The commission in its bulletin No. 1 established the following provisions, which became effective January 1, 1916:

SECTION 1. *Applications.*—Any person, firm, or corporation desiring to use the brand or label provided for in the above-named act, in the manufacture or sale of butter, shall make written application on blanks to be furnished by the dairy and food department, for a license therefor to the dairy and food commissioner at Lansing, which application shall describe by location and name the creamery or factory in which such butter is to be manufactured, and give such other information as may be required. A license shall be granted to such person, firm, or corporation to use such brand or label at the factory described in the application if on investigation by the dairy and food commissioner, his deputy or duly authorized assistants, it appears that all the

provisions of act No. 53, P. A., 1915, and the rules, regulations, and specifications of the commission have been complied with. Such license so granted may be revoked by the said commissioner if any of the provisions of the above-named act, or of the rules, regulations, and specifications of the commission have not been complied with. Such license so granted shall not be transferable.

SEC. 2. *Labels.*[1]—As provided in section 4 of the above-named act the dairy and food commissioner will furnish to those entitled to the use of the brand or label such labels or stamps or other means of imprinting such trade-mark or brand upon the manufactured product or the receptacles containing the same.

SEC. 3. *Samples.*—Any person, firm, or corporation to whom the use of the brand or trade-mark has been granted shall, whenever called upon, submit a sample or samples of the butter manufactured by any such person, firm, or corporation for scoring, grading, or examination to the dairy and food department.

SEC. 4. *License.*—The license referred to in the first section of these rules, regulations, and specifications will be and is issued on the express condition that the person, firm, or corporation to whom such license has been granted shall comply with the following:

(a) *Sanitation.*—Maintain proper and satisfactory sanitary conditions in the plant in which the butter is made, and proper and satisfactory sanitary surroundings.

(b) *Raw material.*—That no milk or cream be received which is to be made or is made in butter, upon which the Michigan brand or trade-mark is to be used, that will not comply with the provisions of act No. 222, P. A., 1913.

(c) *Pasteurization.*—That the butter shall be made from milk or cream that has been pasteurized at a temperature not less than 145° F., and shall be held at that temperature for 20 minutes, or to a temperature not less than 170° F. if not held.

(d) *Grade of butter.*—That the butter shall be of the grade of "commercial extra" (92–93) score, or higher, for not less than 75 per cent of the scorings on samples collected by the dairy and food department, and while the butter is fresh. "Fresh" butter being here defined as butter less than 30 days old from the date made and providing same has been held at a temperature lower than 55° F. after being made. In no instance shall the butter score less than 91 points—100 being perfect—while "fresh," according to the above definition.

(e) *Composition.*—All butter upon which the State trade-mark is to be used shall contain not less than 80 per cent fat, and shall contain less than 16 per cent water; the butter shall have a uniform salt content ranging from not less than 2½ per cent or more than 3¼ per cent.

(f) *Color.*—The color shall be of the highest June shade, uniform, and of the same shade at all seasons.

(g) *Adulterants.*—No preservatives (except pure common butter salt), neutralizers, or adulterants shall be added to the milk or cream from which such butter is made and which is to be sold under the Michigan trade-mark.

(h) *Creamery plant score.*—The creamery or plant in which the butter is made shall receive a minimum score of 85 points—100 being perfect—embodying the following: (1) General appearances of premises, (2) floors, (3) drainage, (4) refrigeration, (5) machinery, (6) water, (7) raw material.

(i) *Reports.*—Make a monthly report to the dairy and food department on blanks to be furnished by said department not later than the last day of the month following.

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[1] A revised trade-mark for Michigan State brand butter was being designed when this bulletin went to press.

(j) *Labeling.*—Label and mark all receptacles containing butter upon which the State trade-mark is to be used in accordance with the special instructions that will be issued to every creamery to whom a license has been granted with such labels, stamps, or other means of imprinting the trade-mark, or such other information as may be required by the dairy and food department.

(k) *Thermostat.*—Install in connection with all pasteurizing machinery a thermostat or recording thermometer, and file all charts for inspection or submit same, if requested, to the dairy and food department.

(l) *To whom shipped.*—Whenever a creamery that has been granted a license to use the State trade-mark changes its market or outlet for its product it shall promptly advise the dairy and food department of such change, and otherwise keep the department fully informed with regard to whom their butter is shipped or sold.

(m) *Change of butter makers.*—Whenever a change of butter makers is contemplated at any creamery using the Michigan State butter brand trade-mark, and before such change is made, the dairy and food department shall first be advised. If a change is made without the consent of the department the right to use the brand or trade-mark shall and will at once be revoked, until such time as it takes for the new butter maker to demonstrate that he is competent to make the grade of butter required under these rules, regulations, and specifications.

ADVERTISING AND SALESMANSHIP.

Advertising and salesmanship are two important factors in the successful marketing of a product. Advertising has been defined as "silent salesmanship," and there is no doubt that judicious and appropriate advertising has a very suggestive and often convincing influence upon the customer, and when properly used may greatly increase the demand for a product. The results obtained from advertising campaigns made by the large creameries and distributors are evidence of their value. Among the various methods employed are advertisements of private brands of butter in newspapers, on street-car signs, bill boards, retail show cards, and demonstrations at retail stores, food shows, and by house-to-house canvassing.

Salesmanship is the art of merchandising and is the basis of successful marketing. Its importance often has not been appreciated by the country creameries, and their butter has been obliged to compete not only against the products of other creameries and the manufacturers of butter substitutes, but also against the salesmanship employed in pushing the sale of these branded and trade-marked products. In a business with a selling organization it is generally recognized that salesmanship gets business, while service, quality, and price hold it. In marketing the products of a small country creamery, which does not have a private brand and in which the identity of the manufacturer of the product is lost in the wholesale distribution of it, it is impossible for a creamery to employ either advertising or salesmanship in the ultimate distribution. With selling organizations for distributing private brands or State brands it is

different, and both advertising and salesmanship may be employed effectively. It is highly important in marketing a branded product that a certain standard of quality be maintained in the product, that a distinctive brand be adopted, and a sanitary and attractive package be used.

SUMMARY.

A knowledge of the various market requirements, marketing methods, and marketing facilities is essential for the successful marketing of creamery butter.

Particular attention should be given to the market requirements as regards quality of butter and size and style of packages. Critical markets require a clean-flavored, firm-bodied, well-made piece of butter for which they pay the highest prices. Butter of inferior quality is discriminated against by critical buyers and usually sells at prices considerably below the better grades.

The use of neat and attractive containers, standardized to a uniform size and style, is highly desirable both for local and foreign markets. Carelessly packed butter has not only a poor appearance but also usually brings a lower price.

The branding of bulk butter packages (tubs and cubes) with the gross, tare, net weight, and churning number greatly facilitates the handling and inspection of butter in the market.

The use of consumers' packages for butter is increasing. A standardization of these, particularly the cartons, is especially desirable.

Market grades for butter have been established by a number of wholesale produce organizations. While these conform quite closely to a uniform standard it is generally conceded that butter which will pass in some markets for a certain grade may be classed differently in another, owing to a different standard of quality which the butter inspector may use.

The employment of butter inspectors and the maintenance of market inspection is at present provided in the wholesale markets by the organizations of wholesale butter distributors. It has been suggested that the promulgation of Government grades for butter and the maintenance of a Federal inspection service would facilitate market distribution and the establishment of more accurate quotations on creamery butter.

Quotations for butter are determined in most markets by market-reporting agencies. Among the market quotations which have the widest trading influences are those established at New York, Chicago, and Elgin, Ill., and San Francisco.

The distribution of butter in the larger cities is generally effected by wholesale distributors commonly termed wholesale receivers or

jobbers, who supply the retailers, hotels, and restaurants. The gross margins taken by butter distributors depend upon a number of factors, such as kind of business, volume of business, extent of charge accounts, competition, and general market conditions.

Approximately one-tenth of the market receipts of butter is placed in public cold storage. Chicago, because of its location, is considered the most important place for the storage of butter. The cost of financing and handling butter in storage is approximately one-fourth cent per pound per month.

Regular, scheduled refrigerator rail service is provided for butter in the more highly developed dairy sections. Express service often is employed for shipping to near-by markets and may be used in combinations with refrigerator freight service in reaching the more distant markets. Cooperation among creameries has proved of value in obtaining and using refrigerator service where creameries are located in close proximity to each other.

State brands for butter which creameries are permitted to use when they have complied with State requirements have been adopted by Minnesota, Iowa, and Michigan. They are intended to convey a guaranty of purity and quality in the butter which will be of mutual benefit to both the producer and the consumer.

The establishment of brands is essential for effective advertising or in retaining the identity of the manufacturer of a product. Appropriate advertising and salesmanship are also two vital factors in successful market distribution. In marketing a branded product it is highly important that a sanitary and attractive package be used and that a certain standard of quality be maintained.

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